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A.D. 1840 . . . . . N° 8439.

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S P E C I F I C A T I O N

OF

THOMAS STIRLING.

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MANUFACTURE OF FUEL.

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STIRLING'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, THOMAS STIRLING, of Limehouse, in the County of Middlesex, Patentee of the Rapid Filterer, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her  
5 Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twentieth day of March, in the third year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Thomas Stirling, Her especial licence, full power, sole privilege and authority, that I, the said Thomas Stirling, my exors, admors, and assigns, or such others  
10 as I, the said Thomas Stirling, my exors, admors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "IMPROVEMENTS IN THE MANUFACTURE OF FUEL;" in which said  
15 Letters Patent is contained a proviso that I, the said Thomas Stirling, shall cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, to be inrolled in Her said Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the  
20 same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said Thomas Stirling, do hereby declare the nature of my said Invention, and the



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manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof (that is to say) :—

Various attempts have been made of late years to manufacture fuel from small coal with tar and pitch or other such bituminous matters combined with clay or such like earth, and to mould the same into blocks, and by pressure to 5 get such blocks into as hard a consistency as possible. Now the object of my Invention is to submit manufactured fuel from such materials to the process of artificial heat whilst in the moulds, whereby I am enabled to produce most beneficial effects by rendering blocks of such fuel more enduring even under combustion than when made according to processes which have heretofore 10 been resorted to. And although my Invention does not relate to any particular combination of quantities of the materials of which the fuel to be manufactured according to my Invention are to be composed, yet in explaining the best means of carrying out my Invention, I will describe a composition of fuel such as I usually make, and which I believe will be found the best relative proportions 15 of the materials ; at the same time I wish it to be understood that I do not confine myself to the quantities herein mentioned, as my Invention above stated does not consist of the compound but in the mode of treating such compounds by a process of heat in moulds. The relative combination of parts I prefer to use is as follows :—One hundred pounds of vegetable tar, 20 three hundred pounds mineral or coal tar, two thousand two hundred and forty pounds of small coal, which should pass through a sieve of six holes or meshes to each square inch. Clay dissolved in water to the consistence of tar, of which solution one hundred and five pounds ; other ingredients may be mixed therewith, as heretofore, but I do not consider it desirable or beneficial so to 25 do. I prefer to mix these matters in the following manner :—I heat the tar in an iron vessel, and stir in the solution of clay, and boil up the compound, then run off such boiling mixture into another pan or vessel placed over a furnace to keep the compound as fluid as possible ; and as it flows in I gradually pour in and mix the small coal as intimately as possible, keeping the whole 30 well stirred ; and when thoroughly mixed, I put the fuel, thus far made, into moulds of the size desired. I prefer using rectangular cast-iron moulds similar to brick moulds, but I have several moulds combined together, so as to be capable of moulding several blocks at the same time. I place the compound or fuel into these moulds as soon as mixed as above described, and then 35 place the moulds so filled into an oven or kiln kept heated to two hundred and fifty degrees to three hundred degrees of Fahrenheit, and let them remain therein for an hour or an hour and a half. I then withdraw them, and permit the blocks of fuel to cool in the moulds, and when cold are removed

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from the moulds. The fuel will be immediately fit for use. I would remark that, although I have been thus particular in stating the exact particulars of the process as pursued by me in carrying out my Invention, at the same time I do not confine myself thereto.

5 Having thus described the nature of my improvements, I would have it understood that what I claim as the Invention secured by the above-recited Letters Patent is the mode of manufacturing fuel from small coal, tar, and clay, by submitting the same in moulds to a considerable degree of artificial heat when in moulds, as above described.

10 In witness whereof, I, the said Thomas Stirling, have hereunto set my hand and seal, this Eighteenth day of September, One thousand eight hundred and forty.

THO<sup>s</sup> (L.S.) STIRLING.

15 **AND BE IT REMEMBERED**, that on the Eighteenth day of September, in the year of our Lord 1840, the aforesaid Thomas Stirling came before our said Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

20 Inrolled the Nineteenth day of September, in the year of our Lord One thousand eight hundred and forty.

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